UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

MAY 12 1997

Ref: 8EPR-EP

VIA FACSIMILE AND MAIL

David Pomerinke, Area Manager
Bureau of Land Management
Buffalo Resource Area
1425 Fort Street
Buffalo, WY 82834

Re: Gillette South Coalbed Methane Project, Draft EIS

Dear Mr. Pomerinke:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act (CAA), Region VIII of the Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Gillette South Coalbed Methane (GSCBM) Project. Based on that review, EPA has prepared comments to be addressed in the Final Environmental Impact Statement (FEIS). A copy of our detailed comments is attached to this letter.

This DEIS is intended to analyze the potential environmental impact of expanding CBM recovery in a 685 square mile area south of Gillette, WY. There is some discrepancy about the total number of CBM wells to be drilled in this large project area. As shown on Map 1 on page 4, the Lightouse and Marquiss Projects exists within the exterior boundaries of the GSCBM Project Area. The basic question is the total number of CBM wells projected for the entire Project Area? This information is critical to the proper assessment of potential environmental impacts from the proposed action and reasonable alternatives.

EPA is concerned about the underlying purpose and need for this proposed BLM action. As you are aware, the statement of the underlying need for an action defines the range of alternatives to be presented to the decision-maker. If clear choices between a reasonable range of alternative are not presented to the decision-maker based on the analysis in the DEIS, the value of the DEIS is questionable. While Chapter One has several paragraphs on the "Purpose and Need", the underlying purpose and need for the project remains unclear. Since there is an unclear underlying purpose and need for the project, it is extremely difficult to define a reasonable range of alternative which satisfies a condition requiring supply or relief. We note in both

Chapter One and Two that the Proposed Action and some possible alternatives are discussed. The alternative are immediately excluded from further analysis for rather superficial reasons and the balance of the document proceed to analyze the Proposed Action. Both the Council on Environmental Quality's Regulations For Implementing NEPA and the 40 Most Asked Questions Concerning the Regulations calls for a reasonable range of alternative to be analyzed in a DEIS as the "heart" of the assessment process.

The EPA review has identified a number of significant concerns with the potential environmental impact of the proposed action and the adequacy of the analysis contained in the DEIS. Specifically EPA's concerns focus on: (1) the adequacy of the air quality analysis and the project's impact to regional air quality; (2) the adequacy of the water quality analysis in establishing compliance with Wyoming Water Quality Standards and the potential impact of depletion of ground water resources; (3) compliance with Executive Order 12856 (Pollution Prevention) and guidance on Pollution Prevention and NEPA dated January 12, 1993 in relation to habitat fragmentation/wildlife impacts and control of non-point source pollution.

Based on the procedures EPA used to evaluate the DEIS and the potential environmental impact of this CBM Project, the DEIS will be listed in the Federal Register as category EO-2 ( Environmental Objections, Insufficient Information). This rating indicates that EPA has identified areas of potential impact that must be avoided to provide adequate protection to the environment and that there is insufficient information to fully assess all reasonable alternatives. Since this project is planned for implementation in an area that has a number of coal strip mines in addition to the projected CBM wells, careful definition of the direct, indirect and cumulative impacts of CBM development is critical to full disclosure of the significances of the potential environmetal impact of the project. The expected development phase of the CBM wells is stated as 3-5 years and the projected maximum life of a production well is estimated at 20 years. The information on the projected drawdown of ground water is presented in Figure 7 to the year 2004. This projection does not extend to the maximum expected life of the project. Figure 12 already indicates actual decline in the hydraulic head in the coal seam greater than projected in the 1988 Cumulative Potential Hydrologic Impact Study (CHIA, USGS, 1988) due to the combined effect of more extensive coal extraction and the first phase of CBM well in the expanded GSCBM area. A cumulative Air Quality Analysis should disclose the combined impact on air quality from the operation of the CBM recovery projects and the other coal extraction in the area. The DEIS states a potential of seven (7) compressor facilities. However, no emissions information is provided in the DEIS that would disclose any significant impact from the compressor facilities. It should be noted that the Belle Fouche Drainage contains at least three Water Quality Limited Segments. Stream segments with such designations need development of a Total Maximum Daily Load (TMDL). This fact was not disclosed in the DEIS, and a process to prepare a TMDL has been omitted from the analysis.

If you have any questions, please call me at (303) 312-6340, or the Project Review Coordinator, Mike Strieby, at (303) 312-6002.

Sincerely,

Carol L. Campbell, Director
Ecosystem Protection Program
Office of Ecosystem Protection & Remediation

Enclosure

cc: Mike Strieby, EPA
Robert Edgar, EPA
Kris Jensen, EPA
Dave Ruiter, EPA
Bruce Zander, EPA
Elaine Suriano, EPA OFA

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
# REGION VIII COMMENTS ON GILLETTE SOUTH DEIS
# MAY 12, 1997

## GENERAL

Maps 1, 2, 3, and 4 should contain a scale and legend. In addition, there should be maps in this DEIS as follows: (1) Map of surface drainage system in the project area and the potential surface discharge points; (2) Maps of the projected CBM well locations and all of the associated service roads; (3) Maps of reasonable alternative to the Proposed Action, i.e. Maps with different drilling densities and locations; (4) Maps of the critical wildlife habitat in the project area and overlay maps of the projected road network and CBM well. Of course, all of these maps should be analyzed and referenced in the Chapters on the Affected Environment and the Environmental Consequence. The use of "Township" and "Range" as reference on maps should be explained in the text of the DEIS.

Generalized reference to other documents ( see page 29, second paragraph) for explanatory information is not helpful to the average reader of this DEIS. Specific applicable information should be extracted from the relevant documents and incorporated into the text of the DEIS. Further reference to the cited documents should then be provided for additional details.

Once an acceptable statement of the underlying purpose and need for this proposed BLM action is established, a reasonable range of alternatives should be defined and analyzed to give a clear choice to the decision-maker to allow a balanced choice between environmental protection and CBM development. This reasonable range of alternative should be documented in maps that could be used for easy reference and project understanding of the potential impact of a particular course of action.

The discussion of the No Action Alternative on pages 26 and 27 fails to outline a viable option. If the BLM decision-maker cannot select the No Action Alternative, isn't there already a NEPA violation by making an irretrievable commitment of resources without fully considering the consequences? If a lease has been issued without considering potential impacts and appropriate mitigation measures, then it becomes very difficult to deny a permit even if impacts are unacceptable.

The DEIS has virtually no discussion of reclamation activities and proper well plugging and abandonment requirements for this CBM project. Since it appears that a number of smaller operators will be involved in this project, it is extremely important to have the necessary resources to reclaim disturbed lands and insure proper plugging and abandonment in a possible bankruptcy.

## AIR QUALITY

Specific Comments

1) Page 51, Air Quality. The units of micro-grams/l3 should probably be micro-grams/m3

2) Page 52, Table 12. The Wyoming Air Quality Standards and NAAQS need to be referenced in this Table (e.g., NAAQS are taken from 40 CFR 50). For Photochemical Oxidant (Ozone), the standard is based on an hourly average. The Footnote should indicate that the hourly average concentration is not to be exceeded on more than one day per year.

3) Page 83, Air Quality. This section does not address the potential emissions of VOC's from produced water. A water analysis should be completed for BTEX and VOCs'. If VOCs' are dissolved in produced water, then VOC emissions occurring during the pumping and storage of produced water should be quantified.

5) Page 83, Air Quality. This section should include an emissions inventory for stationary emissions associated with the operation of the CBM project. This inventory should address Nox, CO, and VOC emissions from gas-fired compressor stations. Additionally, formaldehyde emissions should be quantified. Formaldehyde is a hazardous air pollutant ( HAPs) and can be emitted as a by-product of the combustion process. If the produced gas will be processed through a gas dehydration unit, there may be HAPs emitted from these units. This should also be quantified as part of the projected inventory of emissions from this project.

6) Page 83. A Human Health Risk Assessment using EPA's IRIS database should be completed showing the projected incremental increase of latent cancer resulting from HAP's emissions.

7) Page 83-84, Air Quality. In reference to the sentence, "Emissions would not exceed the standards shown in Table 12", this sentence should be revised since the standards in Table 12 have units of micro-grams/m3 and emissions have units of grams/sec or lbs/hr. Since emissions are not directly comparable to ambient air quality standards, the emissions, calculated in the above comment # 5, should be modeled using an EPA SCREEN model to calculate maximum downwind concentrations which can be compared to the ambient Air Quality Standards shown in Table 12.

8) Page 83, Air Quality. This section should outline any actions that will be taken to mitigate fugitive dust emissions occurring during the construction of well pads and access roads.

9) Page 109, Figure 13. The legend should include the units of the PM10 concentrations (micro-grams/m3) and the averaging time (annual average). The map should also have a distance scale.

10) Page 107, Air Quality. This section does not adequately quantify cumulative air quality

impacts. Using the most likely scenario for ongoing and future CBM recovery, perform ISC3 air dispersion modeling to derive the cumulative air quality effect for the proposed action. The modeled concentrations should be added to existing background concentrations and compared to National Ambient Air Quality Standards. This cumulative air quality impact analysis should also include other reasonably foreseeable future actions (RFD) such as the Encoal Treatment Plant, the two Elk Power Plant, and other coal strip mine expansions. The time line for including projects as RFD has generally been considered to be 5 years.

## WATER QUALITY

General

EPA recommends full disclosure of all project related water quality impacts. The DEIS should provide a detailed description of the existing physical, chemical, and biological characteristics of streams, lakes, and other water bodies in the project area. Identification of potentially affected watersheds on a map will help to clarify the relationship between local waters and proposed project activities.

The description of physical characteristics should include stream class designations. Baseline water quality data at the project level are key in the evaluation of project impacts. Therefore, data from relevant sampling efforts should be included as part of the "Affected Environment" Chapter. When baseline data are not available, assessments based on extrapolation from comparable watersheds could be used with adequate explanation.

The DEIS should discuss the local surface water's capability to assimilate point and non-point pollution from the project and other sources. It should also provide a quantitative basis to judge whether physical and chemical parameters, such as temperature, turbidity, sediment accumulation, and priority organics will be kept at levels that will protect and support designated uses and meet Wyoming Water Quality Standards under each alternative.

The DEIS proposed a plan to surface dispose of produced water to the Belle Fouche. It is EPA's understanding that there are three Water Quality Limited Segments on the river. Stream segments with such designations need development of a Total Maximum Daily Load (TMDL). The TMDL process identifies the maximum load of pollutant (e.g. sediment, nutrient, metals) a waterbody is able to assimilate and fully support its designated uses; allocates portions of the maximum load to all sources; identifies the necessary controls that may be implemented, and describes a monitoring plan and associated corrective feedback loop to insure that uses are fully supported. EPA notes that the BLM is responsible for insuring that their activities do not cause impairment of surface waters, and for reviewing activities contributing to impairment. Fully understanding the Wyoming Water Quality Standards program and insuring that this CBM project will not cause further impairment through the implementation of the TMDL process should be addressed in this DEIS.

Specific Comments

1) Page 4, Last Sentence. This sentence implies that WDEQ is obligated to issue NPDES permits to all CBM wells. This sentence should be revised to explain the WDEQ role is to implement the NPDES program as delegated to the State of Wyoming and that the discharge of any produced waters from CBM wells to Waters of the United States may require an NPDES permit.

2) Page 10, Last Paragraph. In reference to the BLM policy change for access roads, the BLM may wish to consider revising their policy or creating a specific policy for CBM projects. Such a policy could address critical elements like drainage crossings and reclamations.

3) Page 23, Paragraph Four. EPA supports careful review of additional monitoring needs based on the criteria listed. This type of approach may be useful in the prevention of erosion problems.

4) Page 24, Channel Monitoring. Please describe how channel monitoring will be implemented and what actions will be taken if problems develop. Is there baseline data on the channel that can be used to define an observation of "...accelerated erosion and degradation...:"?

5) Page 24, Monitoring Implementation. What is the criteria for adding monitoring well to the network?

6) Page 29, Paragraph One. Don't all river systems have flood plains?

7) Page 30, Major Drainage Systems. The Belle Fouche and Cheyenne are listed as major drainage systems. A map of these drainage systems and tributaries would be useful to understand the project and the proposed produced water discharged points.

8) Page 38, Paragraph Two. This paragraph highlights a situation that we believe should be more extensively studied and discussed in the cumulative impacts section of this DEIS. What are the potential long-term cumulative of local leakage between aquifers due to poor well completion techniques and corrosion of old well casings? Is there a requirement to properly plug and abandon test holes? Is it implemented? Does BLM have information on the magnitude of the situation in the project area?

9) Page 39, Table 6. A column with aquatic life standards should be added to this Table. This is important information since it is anticipated that produced water will be disposed to the surface system.

10) Page 41, Table 8. This Table should be expanded to include Water Quality Standard Criteria and exceedance values similar to the approach in Table 6.

11) Page 66. Addition pumping scenarios should be included in the modeling effort to more closely simulate actual conditions. This is particularly relevant to the cumulative impacts of two

overlapping activities of coal mining and CBM development. There is no summary information on the 323 private wells known to exist in the project area. A Table or Chart summarizing individual water well completions, water levels and pumping rates would be helpful to document baseline conditions. Existing information is referenced as the basis for projecting that five feet or more of ground water drawdown will be noticeable at least 8 mile to the north, west, and south of the CBM development. Is this the impact to be expected in the year 2004 or at the project maximum extent of the porject to the year 2017?

12) Page 69, CHIA Report. EPA is concerned about the use of a report generated in 1988 prior to CBM development and not reflecting the current level of coal mining activities. This report should be updated immediately to include all ground water depletion activities and the results used to consider further CBM development.

13) Page 71, Figures 2-6. The information on these figures provides limited insight into the potential impact of water drawdown from CBM well since the CBM activity was initiated in 1993 and there were only 133 CBM wells by 1995. A projection of total ground water impacts should be prepared using the most likely development scenario to the year 2017. Potential recharge to the area should be included in the calculations of total projected impact.

14) Page 78, Surface Water Discharge. It is indicated that produced water from the CBM wells will be discharged to the surface water drainage using energy dissipators and discharging into well developed channels. What monitoring will be implemented to track this discharge proposal, especially during storm events? Many storm events may cause average daily flows to be exceed and erosion to occur. This situation could be exacerbated by continued discharge from the CBM wells. Have provisions been made to repair and or mitigate damages that may be caused in this situation?

## POLLUTION PREVENTION
## HABITAT PRESERVATION/PROTECTION

General

EPA is concerned about comprehensive protection and preservation measures for indigenous plants and wildlife. Species-specific ecosystems requirements should be preserved and pollution prevention concepts for air quality and water quality should be established. These requirements and concepts should be documented in this DEIS. EPA recommends that actual critical habitat use patterns be established by site-specific studies. The potential habitat fragmentation that could occur under the currently proposed action could cause unacceptable impacts to some of the wildlife in the project area. The DEIS doesn't contain any maps that would designate critical habitat and establish mitigation measures. EPA expects that the FEIS will specify plans for mitigation of potential impacts to wildlife and a proposal for monitoring of these measures.

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MAY 13 1997

**MEMORANDUM**

SUBJECT: Summary Paragraph For Gillette South Coal Bed Methane DEIS

FROM: Mike Strieby, Principal Reviewer

TO: Ginny Rose

EPA has completed its review of the draft Environmental Impact Statement for the Gillette South Coalbed Project and submitted comments to the Area Manager, Bureau of Land Management, Buffalo Resource Area on May 12, 1997.

EPA expressed environmental objections to the proposed action due to potential air quality, water quality (surface discharge and ground water depletion) and wildlife adverse impacts. EPA requested the above issues be addressed in the FEIS.

**RATING: EO-2**